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AUTHOR Lauby, Anne, Ed.
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ABSTRACT

This document is a selected bibliography of social sciences in forestry. It includes five major categories: (1) social science applied to forestry at large; (2) applied to forestry's production agents; (3) applied to forest production; (4) applied to manufacturing; and (5) applied to marketing, trade and demand for forest output. The booklet has a subject matter classification scheme followed by the list of references for each category. The entries are arranged alphabetically by author and contain the source of information, place and date of publication, volume number and number of pages. A brief description of each resource is given. (GA)

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SOCIAL SCIENCES in FORESTRY

A CURRENT SELECTED BIBLIOGRAPHY

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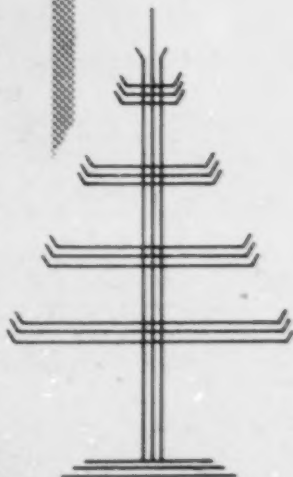
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DEPARTMENT OF FORESTRY & FOREST PRODUCTS
SCHOOL OF FORESTRY & WILDLIFE RESOURCES
VIRGINIA POLYTECHNIC INSTITUTE & STATE UNIVERSITY
BLACKSBURG 24061



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VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
School of Forestry and Wildlife Resources
Department of Forestry and Forest Products
Blacksburg, Virginia 24061

SOCIAL SCIENCES IN FORESTRY

Subject-Matter Classification Scheme

Note: This outline is regarded as working for the most part from the general to the specific. Material covering two or more sections of this outline is classified in the most general of these sections. Material which is classifiable in any of two or more sections is classified in the most specific of these sections.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

- A General principles, scope, content, method
- B History, status, prospects of forestry in an area, society in an area (This section includes material on forest resources alone, as opposed to those on consumer or intermediate resources alone, for which see appropriate later sections.)
 - 1 General
 - 2 United States, Canada
 - 3 Other north-temperate nations
 - 4 South-temperate nations
 - 5 Nations in lower latitudes
- C Law, politics, policy, plan, program, and their administration
- D Other influences
 - 1 Taxation
 - a General
 - b Property, general and special; severance; lieu payment
 - c Income, inheritance, other
 - 2 Valuation [See also IIIA5a(5).]
 - 3 Insurance
 - 4 Social interest, value system, custom, folklore, culture
 - 5 Characteristics of the individual
 - 6 Public relations, other
- E Research (For research on specific topics, see those topics.)
- F Professional and subprofessional affairs, education, employment of foresters
- G Social and economic development (See also IB.)
- H Environmental concern

Subject-Matter Classification Scheme--Continued

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

(See also the individual operation or type of output in III, IV, V.)

A Labor (Some material on labor will be found in IF, IV.)

- 1 General, employment, demand
- 2 Supply, union
- 3 Wage, cost, hours, productivity, technology, training, return, benefit
- 4 Working condition, turnover, absenteeism, safety, insurance
- 5 Characteristics of the worker

* B Owner, ownership, manager, entrepreneur, holding (See also IC, IIC3.)

- 1 General
- 2 Public
 - a General
 - b Federal, central
 - c Regional, local
- 3 Private
 - a General
 - b Industrial
 - c Nonindustrial

C Land

- 1 Context of supply, requirement, etc.
- 2 Description, use trend and status, interpreted description
- 3 Management, use prospect and plan, planning, marketing, tenure
- 4 Research method

D Capital

- 1 General, investment, interest, finance
(For investment in forest production, see IIIE; for that in manufacturing, see IVA4.)
- 2 Credit

III APPLIED TO FOREST PRODUCTION (See also IIB, C.)

A Production including nontimber commodities and services

- 1 General, supply, multipurpose management
- 2 Christmas trees, greens
- 3 Range and livestock
- 4 Naval stores, maple product
- 5 Recreation
 - a General
 - (1) General
 - (2) Research
 - (3) Decision making, planning, management
 - (4) Demand, consumer, market
 - (5) Valuation

Subject Matter Classification Scheme--Continued

III APPLIED TO FOREST PRODUCTION--Continued

- 5 Recreation--Continued
 - b Driving, on or off road
 - c Walking, hiking, horseback riding, nature study
 - d Picnicking
 - e Camping
 - f Wilderness activities
 - g Amenity values
 - h Other recreation activity
- 6 Water, soil, watershed management, shelterbelts
- 7 Wildlife, hunting, fishing
- 8 Urban forestry
- B Production chiefly of timber
 - 1 General, supply
 - 2 Soil, site, site improvement
 - 3 Tree regeneration and improvement
 - 4 Intermediate cutting, pruning, stand improvement
 - 5 Harvest cutting, rotation, cutting cycle, stocking, regulation, allowable cut
(For harvesting treated as engineering, see IVB.)
- C Roads, other forest-management transportation
(For transportation in harvesting, see IVB4; in manufacturing and marketing, see VD.)
- D Damage and protection
 - 1 From fire
 - 2 Prescribed burning
 - 3 From insects
 - 4 From other agencies
(For water damage and soil erosion, see IIIA6.)
- E Decision making, planning, investment, accounting, inventorying
(For investment in general, see IID1.)

IV APPLIED TO MANUFACTURING

(For material on forestry in general, including forest land resources, see IB.)

- A The industry in general
 - 1 Status and trend
 - a General
 - b United States, Canada
 - c Other north-temperate nations
 - d South-temperate nations
 - e Nations in lower latitudes
 - 2 Directory
(Includes those covering specific branches of industry.)

Subject-Matter Classification Scheme--Continued

IV APPLIED TO MANUFACTURING--Continued

- 3 History
- 4 Decision making, planning, investment, accounting, inventorying
(For a specific branch of industry, see that branch, "Operation of firm"; for investment in general, see IID1.)
- B Timber-harvesting industry
(Includes roundwood in general; for specific types, see IVC, "raw material." For harvesting as silviculture, see IIIB4, 5.)
 - 1 Status and trend
 - 2 Operation of firm
 - 3 Utilization of the stand or tree
(For utilization of a specific product, see the branch of industry in question.)
 - a General
 - b Logging residue and its disposal
 - 4 Transportation (Skidding, yarding, loading, hauling to mill. For transportation in forest management, see IIIC; in manufacturing and marketing, see VD.
- C Wood-using industry
 - 1 Lumber, allied product, pallet
 - a Industry status and trend
 - b Production, consumption, stocks, other statistics
(For sawtimber, see IB, IVB; for sawlog, see IVC1d.)
 - c Operation of firm
 - d Raw material
 - 2 Pulp, paper, board
 - a Industry status and trend
 - b Operation of firm
 - c Raw material
 - d By-products
 - 3 Veneer, plywood, panel
 - a Industry status and trend
 - b Operation of firm
 - c Raw material
 - 4 Bark, chips, other residue
(See also IVB3 and the industry branch in question, "Operation of firm.")
 - 5 Pole, piling, post, mine timber
 - 6 Railway tie
 - 7 Furniture
 - 8 Charcoal, fuelwood, other combustibles; energy
 - 9 Particleboard, hardboard, fibreboard
 - 10 Construction
 - 11 Other wood-using industry
- D Other forest industry
 - 1 Decorative product
 - 2 Naval stores
 - 3 Maple product
 - 4 Other

Subject-Matter Classification Scheme--Continued

- V APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT
(For marketing and demand for productive agents, see II.)
 - A Demand (See also IF.)
 - 1 General; history of consumption; consumption-production relationships
 - 2 Consumption or production prospect, goal, requirement, prediction
(For material on short-term requirement, see the industry in question in IV, "Industry status and trend.")
 - 3 Consumer and his preference
(For material on specific forest resources, see also IIIA, B.)
 - B Market, marketing, trade, export, import
 - 1 General
 - a General
 - b Futures, hedging
 - 2 Stumpage, log
 - 3 Lumber, plywood, allied products
 - 4 Pulp, paper, board
 - a Product
 - b Wood raw material
 - 5 Other wood products
 - 6 Christmas trees, greens
 - 7 Other type of output (See also IIC3.)
 - C Price, value
 - 1 General
 - 2 Stumpage, log
 - 3 Other type of output
 - 4 Price reporting
 - D Transportation (Includes transportation in manufacturing.)
(For transportation in forest management, see IIIC; in harvesting, see IVB4.)

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

- A SO FEW NEWS. Proceedings of Southern Forest Economics Workshop, Apr 6-7, 1977, Gulf Shores, Alabama. SoFew News, North Carolina State University, Raleigh. 1977.

Papers include: Outlook for southern forest products, an overview (J. Muench, Jr.); Economic trends in the pulp and paper industry in the U.S. and South (B. Slatin); Impacts of national forest timber harvesting scheduling policies on softwood stumpage, lumber and plywood markets: econometrical analysis (D. Adams); Southern forest resource opportunities (T. Hart); A newcomer's experience in the South (M. Wangel); Forest land, to own or not to own (Z. White); Mineral considerations in land investment decisions (G. Gotschall); Why and how do Scandinavians import pulpwood (J. Overgaard); Short and long term dynamics of the forest products industry (H. Veltkamp); A case for developing southern pine fiber futures contracts (J. Olmedo, Jr.); A security analyst's view of the forest products industry (B. Smith); An input/output study of the Mississippi economy with emphasis on forestry (T. Terfehr, D. Porterfield, K. Stuart).

- B1 KILLIAN, H. Art, an important source of forest history. In German. Allgemeine Forstzeitung 8(3): 61. 1977.

Painting by the Dutch artist R. Savery, made in 1610, shows a 2-handed saw being used for cross-cutting in the forest. The earliest date for a forest saw is thought to have been 1759.

- B2 BARNARD, JOSEPH E., and TERESA M. BOWERS. A preview of West Virginia's forest resource. USDA Forest Service Northeastern Forest Experiment Station Res. Note NE-249, 11 pp. 1977.

Forest land makes up 75 percent of the total land area. Since 1961, growing-stock volume increased 24 percent.

- B2 BYRON, R. N. Community stability and forest policy in British Columbia. Canadian Journal of Forest Research 8(1): 61-66. Mar 1978.

Sustained-yield forest management in British Columbia has not brought about community stability. Size and distribution of forest industry centers are more likely determined by economies of scale and by location of transportation routes.

- B2 HERRICK, OWEN W. Impact of alternative timber management policies on availability of forest land in the Northeast. USDA Forest Service Northeastern Forest Experiment Station Res. Pap. NE-390, 14 pp. 1977.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

Management alternatives ranging from extensive to intensive are weighed against several estimates of timber requirements for the year 2000. Areas are identified that are likely to be affected most by further shifts toward nontimber use of the forest land.

- B2 OVERHOLSER, JAMES L. Oregon hardwood timber. Oregon State University Research Laboratory Res. Bul. 16, 43 pp. Oct 1977.

Includes sections on the hardwood industry and special products.

- B2 SHEFFIELD, RAYMOND M. Coastal Virginia's timber resource—trends, present conditions, and opportunities for improvement. USDA Forest Service Southeastern Forest Experiment Station Res. Bul. SE-43, 24 pp. Feb 1978.

Forest surveys of the Coastal Plain of Virginia reveal a declining forest land base, a declining softwood inventory, and unfavorable relationships between growth and removal of softwoods.

- B2 SHIRLEY, RAY. Forest resources of Georgia. Forest Farmer 37(6): 8-9, 44. Apr 1978.

- B2 SOUTHERN APPALACHIAN RESEARCH-RESOURCE MANAGEMENT COOPERATIVE. Proceedings, western North Carolina Research-Resource Management conference, Sep 14-16, 1977, Asheville, North Carolina. USDA Forest Service Southeastern Forest Experiment Station, Asheville. 127 pp. 1977.

Topics covered include: water resources and fisheries management, forest land and wildlife management, recreation and preserved lands management, and SARRMC's role in western North Carolina.

- B2 STEPHENS, G. R. The Connecticut forest. In Perspectives in Forest Entomology, J. F. Anderson and H. K. Kaya, Eds. Academic Press Inc., New York. pp. 21-30. 1976.

Forests and their history. Suburban forest covers 58 percent of the state's land area.

- B2 WAHLGREN, H. E., ROLAND BARGER, and HAROLD MARX. Stretching our nation's timber supply, close timber utilization. USDA Forest Service. 9 pp. 1977.

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- B2 YONCE, FREDERICK J. Lumbering and the public timberlands in Washington, the era of disposal. Journal of Forest History 22(1): 4-17. Jan 1978.

How government land policy affected the logging and disposition of Washington timberlands during the last half of the 19th century.

- B3 ALLGEMEINE FORSTZEITSCHRIFT. Timber availability forecasts for Bavaria, and their implications. In German. Allgemeine Forstzeitschrift 31(51/52): 1130-1172. 1976.

Articles on state, industrial, and other private forests.

- B3 ANDREASON, OVE. Future forest management trends in Sweden. In English; Fre. sum. Forestry Chronicle 54(1): 29-33. Feb 1978.

Forest management plans for Sweden stress fuller timber utilization and increased production.

- B3 BLANDON, PETER R. Contemporary problems of Soviet forestry. Scottish Forestry 32(1): 7-25. Jan 1978.

Economic, problems of management, logging, and transportation.

- B3 BOROTA, JAN. Forests and timber production in USSR. In Czech; Eng. sum. Lesnický časopis 23(4): 369-376. 1977.

- B3 BROWNE, R. N. The case for home grown timber. II. The potential production from British forests. Scottish Forestry 30(4): 275-292. 1976.

Present rate of planting will enable U.K. to meet 50 percent of its wood and wood-products needs by 2020.

- B3 ECCHER, A., and R. TITTARELLI. Possibilities and limitations of productive forestry in Molise. In Italian. Cellulosa e Carta 27(12): 5-17. 1976.

- B3 ECKMULLNER, O. Lapland is worth a visit. In German. Allgemeine Forstzeitung 88(3): 60-61. 1977.

Forests and forestry in Finnish Lapland.

- B3 GATHY, P. Forests and recreation in Norway. In French. Bulletin de la Societe Royale Forestiere de Belgique 84(2): 101-114. 1977.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

Topics covered include: Norwegian forestry; multiple-use forests; land-use planning; recreational activities; national parks; and environmental protection.

- B3 HUTTUNEN, TERHO. Wood consumption, total drain and forest balance in Finland 1975-77. In Finnish; Eng. sum. *Folia Forestalia* 330, 50 pp. 1977.

- B3 KORF, V. Forest management in Czechoslovakia. In English; Czech, Fre., and Spa. sum. *Silvaecultura Tropica et Subtropica* No. 4, pp. 171-185. 1976.

Since the 14th century.

- B3 MITCHELL, F. The Irish landscape. William Collins Sons & Co. Ltd., Glasgow. 240 pp. 1976.

Includes history of Irish woodlands. Man's use of trees in Ireland from Neolithic times to the present.

- B3 NETHERLANDS, MINISTERIE VAN LANDBOUW EN VISSERIJ. Structural review of woods and forestry. In Dutch. Netherlands, Ministerie van Landbouw en Visserij. The Hague, Netherlands. 120 pp. 1977.

Function of woodlands in the Netherlands.

- B3 SCHAEFFER, R. The alienation of state forests. In French. *Bulletin de la Societe Forestiere de Franche-Compte et des Provinces de l'Est*. 38(5): 95-99. 1977.

Historical account of main periods of alienation of state forests in France. Since the 1860s, the alienation of forests to raise money has not been practiced by French governments.

- B3 SCHWEIZERISCHE ZEITSCHRIFT FUR FORSTWESEN. Annual meeting of the Swiss Forestry Society, Sep 15-17, 1977, Giornico, Ticino. In German, French, and Italian. *Schweizerische Zeitschrift fur Forstwesen* 128(6): 343-447. 1977.

Collection of papers dealing with forests, forestry, and nature conservation in Ticino canton.

- B3 SCHWEIZERISCHE ZEITSCHRIFT FUR FORSTWESEN. Forestry in the canton of Zug, Switzerland. In German; Fre. sum. *Schweizerische Zeitschrift fur Forstwesen* 127(8): 517-557. 1976.

- B3 TAMM, C. O. (ED). Man and the Boreal Forest. Swedish Natural Science Research Council, Stockholm. *Ecological Bulletins NFR* 21, 154 pp. 1976.

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19 background papers given at regional meeting in Sweden in 1975. 4 topics: multiple use of forest lands; pollution in forestry; energy flow in forestry; ecological and social impacts of methods for increasing wood production or the efficiency of management operations.

- B3 WIEDEMANN, H. Two hundred years of forest management in Prussia. In German. Aus dem Walde No. 26, 316 pp. 1976.

1740-1945.

- B3 WINTERS, ROBERT K. American foresters in the Japanese occupation. Journal of Forestry 76(3): 184-185. Mar 1978.

Japanese forestry benefitted from the American occupation of Japan after World War II.

- B4 CAMERON, G. Plantation forestry: people and careers. New Zealand Journal of Forestry 22(2): 221-225. 1977.

Forestry in New Zealand is changing so as to focus more on people and less on production. For "people forestry" to be fully implemented, a range of skills much wider than those needed for basic silvicultural management of forests is required, including landscaping, behavioral science, town and country planning, parks and reserves administration, and personnel management.

- B5 CHAI, L. A report on forestry development planning in Sarawak. FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia. Manila, Aug 16, 1976. Rome. 17 pp. 1976.

- B5 FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. National forestry planning report, Peninsular Malaysia. FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia. Manila, Aug 16, 1976. Rome. 17 pp. 1976.

- B5 FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. National forestry planning report, Thailand. FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia. Manila, Aug 16, 1976. Rome. 9 pp. 1976.

- B5 HENNING, DANIEL H. Social science considerations in the management of tropical forest zones of South East Asia. In English; Hin., Ger., and Fre. sum. Indian Forester 103(12): 803-817. Dec 1977.

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Paper presented at the Regional MAB Meeting on Integrated Research and Training in the Humid Forest Zone of South East Asia, Kuala Lumpur, Malaysia, Aug 19-22, 1974. Application of social sciences to tropical forest management is needed to protect the forests from irreversible destruction.

- B5 KUDELA, M. Present forestry problems in Cuba. In Spanish; Czech, Eng., and Fre. sum. *Silvaecultura Tropica et Subtropica* No. 4, pp. 59-76. 1976.

Only 13 percent of Cuban land is forest. 79 percent of the harvested timber is used for fuel.

- B5 POUILLOUX, C. Forestry problems in Burundi. In French; Spa. and Eng. sum. *Bois et Forêts des Tropiques* No. 170, pp. 21-34. 1976.

- B5 ROTHERHAM, TONY. Iran boosts fledgling forest industry. *Canadian Forest Industries* 97(12): 19, 21. Dec 1977.

Forestry in Iran.

- B5 SERNA, C. B., and A. M. MENDOZA. Status of forestry planning in the Philippines. *FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia*. Manila, Aug 16, 1976. Rome. 11 pp. 1976.

- B5 STEVENS, MERVIN E. Forest and range resources of Nepal. *Journal of Forestry* 76(1): 45-47. Jan 1978.

- B5 VACLAV, E. Forestry in Liberia. In English; Czech, Fre., and Spa. sum. *Tropica et Subtropica* No. 5, pp. 21-40. 1976.

- C BEHAN, R. W. How the Forest Service should apply the National Forest Management Act of 1976. *Forest Industries* 104(11): 29-34, 84. Oct 1977.

The National Forest Management Act offers the Forest Service a temptation to follow traditional timber policies, notably sustained yield at the culmination of mean annual growth, justified as a national program. But the Act had better be interpreted as encouraging a first emphasis upon regional social values: upon "high site" forestry aimed at efficient use of our scarce timber capital.

- C BULLETIN DE LA SOCIETE ROYAL FORESTIERE DE BELGIQUE. Objects of forest policy in the European Community. In French. *Bulletin de la Societe Royal Forestiere de Belgique* 84(2): 150-154. 1977.

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- C CHOWDHARY, R. L. Social obligations of Forestry Sector, vis-a-vis forestry management planning. In English; Hin., Ger., and Fre. sum. Indian Forester 103(12): 787-794. Dec 1977.

India's Forestry Sector must recognize links between forests and food, forests and people, and forests and wood. Forest management objectives need to be redefined. Working plans should have long-range rather than short-term goals.

- C FORET. Overall concept of a Swiss forest policy and wood-industry policy. In French. Foret 29(11): 353-372. 1976.

New forest policy that integrates forestry and the wood industry should not sacrifice principles of existing forest policy.

- C FRASER, A. I. The planning of on-going forestry programs. FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia. Manila, Aug 16, 1976. Rome. 14 pp. 1976.

- C GLUCK, P. The role of a modern science of forest policy. In German. Allgemeine Forstzeitschrift 32(20): 490-496. 1977.

Science of forest policy is concerned with the problem of solving the conflicts among the various forest functions and among a multiplicity of interests.

- C GORNICKI, PHILIP P., and B. ALLEN DUNN. The principal laws relating to forest management in South Carolina. Clemson University Department of Forestry Tech. Pap. No. 8, 219 pp. Jul 1977.

- C HUMEL, R. Forestry policies in the European Community and their implications for Scotland. Address to Spring General Meeting. Scottish Forestry 31(3): 149-160. Jul 1977.

Coordinating forest policy aims of European Economic Community.

- C JACOBS, D. C. P. A review of certain State forest policies and their influence on timber harvesting. South African Forestry Journal No. 101, pp. 20-22. Jun 1977.

Major objective of South Africa's forest policy is to acquire and manage land that will produce timber economically.

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- C JAMIL, H. A. A framework of analysis for forest policy. FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia. Manila, Aug 16, 1976. Rome. 7 pp. 1976.

- C NEW ZEALAND FOREST SERVICE. Management policy for New Zealand's indigenous State forests. New Zealand Forest Service, Wellington. 15 pp. 1977.

Revised policy for publicly owned indigenous forests managed by the Forest Service.

- C TOWELL, WILLIAM E. Forest regulation, making the best of it. American Forests 84(1): 19, 56, 57. Jan 1978.

Federal regulation of private, nonindustrial forests can be postponed if the landowners and state forestry associations implement sound forestry practices.

- C WALD UND HOLZ. Overall concept of a Swiss forest policy and wood-industry policy. In German. Wald und Holz 58(2): 85-100. 1976/1977.

See FORET, IC.

- C WALKER, JOHN L. Apply economic criteria to national forest harvest to improve resource, generate income. Forest Industries 104(112): 29-33. Oct 1977.

A plea for national-forest management in harmony with economic principles, which would allocate timber capital efficiently, avoid Forest Service deficits, and replace the policy of nondeclining even flow with a flexible policy. The recommended policy would be sensitive to timber supply and demand in an economic sense.

- D1a HENSEL, J. S. California Forest Taxation Reform Act of 1976. American Pulpwood Association Technical Release No. 77-R-22, 7 pp. 1977.

- D1a HENSEL, J. S. Minnesota tree growth tax law. American Pulpwood Association Technical Release No. 77-R-19, 8 pp. 1977.

- D1a HENSEL, J. S. Oregon's timber tax laws. American Pulpwood Association Technical Release No. 77-R-21, 6 pp. 1977.

- D1a HENSEL, J. S. Washington's forest tax law. American Pulpwood Association Technical Release No. 77-R-25, 4 pp. 1977.

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- D1b KLEMPERER, W. DAVID. An economic analysis of the case against ad valorem property taxation in forestry, a comment. National Tax Journal 30(4): 469. Dec 1977.

Takes issue with an earlier article suggesting that property tax does not in theory discriminate against forestry. Property-tax impacts on land use depend upon the direction of tax shifting.

- D1b KNEDLIK, WILL. Economic analyses vital to private forest taxation law. Forest Industries 105(3): 89-91. Mar 1978.

Problems policymakers encounter in their efforts to establish an equitable tax structure for forest land and timber.

- D2 KANGAS, YRJO. Measurement of the potential stand quality. In German; Fin. and Eng. sum. Acta Forestalia Fennica Vol. 152, 48 pp. 1976.

Each stand is given a specific value that reflects its overall productivity. Different stands can be compared directly, regardless of their age, tree composition, or site.

- D2 KOSTOV, P., and A. BAEV. Classification of the useful functions of forests. In Bulgarian; Rus. and Eng. sum. Gorskos-topanska Nauka 13(6): 35-42. 1976.

Soviet and East European method of defining social benefits of the forest should be revised. New system would divide benefits into 2 classes: wood producing and non-wood producing. Recreation, cultural, and aesthetic benefits would be accounted for in the non-wood-producing class.

- D2 SAGL, W. Problems of forest valuation in assessing compensation. In German; Eng. sum. Centralblatt fur das Gesamte Forstwesen 93(3): 129-145. 1976.

Compensation for nontimber use of forest land. Assessing losses of timber production from damaged or improperly harvested stands.

- D2 VORONIN, I. V. The economic importance of wood increment and the method of calculating it. In Russian. Lesnoe Khozyaistvo No. 11, pp. 36-38. 1976.

- D3 BROOME, P. Some aspects of insurance in the growing timber field. South African Forestry Journal No. 101, pp. 58-60. Jun 1977.

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History of timber insurance in South Africa. Fires have influenced the writing of timber insurance.

- D3 HAUGLAND, RICHARD L. Forest fire losses insurable, but prevention measures best. Forest Industries 104(11): 76-77. Oct 1977.

Negligence, contractor responsibility, and types of insurance.

- D3 RURAL LAND INVESTMENT REVIEW. Forest fires, insurance and risk. Rural Land Investment Review 1(2): 3-4. 1977.

Description of one insurance policy for woodlands, available in the UK.

- D6 BLACK, NORMAN. How to win friends and influence people using community relations. Pulp and Paper 52(2): 150-152. Feb 1978.

Public relations programs that can be implemented in the pulp and paper industry.

- D6 FROHLICH, H. J., and H. KLINGELHOFER. Public relations work in Hess and conclusions to be drawn from an opinion poll. In German. Allgemeine Forstzeitschrift 32(20): 487-490. 1977.

- D6 PEASE, DAVID A. Informing the public, industry people want to see more action. Forest Industries 105(4): 52-53, 68. Apr 1978.

Readers suggest ways for the forest industry to present its views to the public and to government officials.

- E CLAWSON, MARION (ED). Research in forest economics and forest policy. Resources for the Future, Washington, D.C. 555 pp. Jul 1977.

Papers from Resources for the Future symposium held in Jan 1977. Research needs in forest economics and policy, an interpretative and evaluative summary (E. Castle); American forests in a dynamic world (M. Clawson); Balancing supplies and demands (C. Row); Pricing policy for timber products from forest lands, resource allocation and income distribution effects (W. Mead); Promising research topics regarding non-timber products from forest-related lands (G. Brown Jr.); The role of public and private forestry sectors (M. Clawson); Land and multiple use (F. Convery); Social aspects of forest policy research (W. Burch Jr.); Information resources for research in forest economics and policy (D. Teeguarden); Research in international forest economics (J. Zivnuska);

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Economics of forest management, research needs and priorities (H. Gregersen, G. Staebler); Forest policy research, an examination of research needs (P. Ellefson, S. Spurr).

- E GRAY, JOHN, and ROBERT BUCKMAN. Research, catalyst for change. American Forests 84(1): 35-37, 51. Jan 1978.

Ever-changing world alters forestry-related research priorities and programs. New area of research is energy.

- E IYAMBO, D. E. Forestry research in developing countries. Unasylva 28(111): 12-17. 1976.

- E RUARK, H. E. Forest research in Georgia. Forest Farmer 37(6): 12-13. Apr 1978.

- F BRIGHTWELL, SANDERS. The role of the consulting forester in developing Georgia's forest resource. Forest Farmer 37(6): 25, 42-43. Apr 1978.

- F BURKHART, HAROLD E., and ALFRED D. SULLIVAN. Communications among researchers and practitioners. In English; Fre. sum. Forestry Chronicle 53(6): 325-327. Dec 1977.

Communications could be improved by closer manager-research cooperation, increased emphasis on management-research interpreters, and more effective presentations and publications by research workers.

- F CHAVASSE, C. G. R. (ED). Forestry handbook. New Zealand Institute of Foresters. 224 pp. 1977.

Handbook of the New Zealand Institute of Foresters is divided into eleven sections including: Acts and Regulations, Environment and Recreation, Private and Local Body Forestry, Forest Management, and Logging and Utilization.

- F CHILDS, B. H. Presidential address, foresters and their Institute. New Zealand Journal of Forestry 22(2): 181-186. 1977.

Role of New Zealand Institute of Foresters.

- F CHOW, POO, and DETLEF NOACK. Forestry and forest products education in West Germany. Forest Products Journal 28(4): 14-15. Apr 1978.

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- F DUNN, B. ALLEN, and PHILIP P. GORNICKI. Professional profile of urban foresters practicing in the eastern United States. Journal of Forestry 76(4): 215-216. Apr 1978.
- The majority of those surveyed have graduated from college. Most became urban foresters since 1970.
- F HEIKKENEN, HERMAN J. Status of undergraduate courses in forest entomology, 1975. Journal of Forestry 76(2): 127. Feb 1978.
- F HUTCHINSON, F. E. New Zealand Institute of Foresters, the founding years. New Zealand Journal of Forestry 22(2): 187-192. 1977.
- F LONG, W. R. The selection of candidates for training in forestry in Lesotho (South Africa). South African Forestry Journal No. 102, pp. 51-53. Sep 1977.
- F MACKENZIE, A. A. The role our Institute can play in the timber industry. Presented at the 9th Annual General Meeting of the South African Institute of Forestry. South African Forestry Journal No. 101, pp. 6-9. Jun 1977.
- F REIDEL, CARL H. The new forester, a "philosopher-plumber." American Forests 84(4): 6, 60-62. Apr 1978.
- Need for foresters to be both philosophers and practitioners. Traditional doctrines of forest resource management need to be examined and perhaps modified or abandoned. Foresters should participate in making decisions concerning land-use planning, resource policy, and environmental management, on a national scale.
- F USDA FOREST SERVICE. A job with the Forest Service, a guide to nonprofessional employment. United States Department of Agriculture Misc. Publ. No. 843, 19 pp. 1977.
- G FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. Report on the FAO/SIDA Expert Consultation of Forestry for Community Development, Rome, Jun 21-22, 1977. Rome. 23 pp. 1977.
- G GRAY, JAMES R., and BURTON C. ENGLISH. Local benefits of national forest resources in north-central New Mexico. New Mexico State University Agricultural Experiment Station Res. Pap. 327, 44 pp. Nov 1976.

Present and potential socio-economic benefits.

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- G ROCHE, LAURENCE. Forestry and the community. In English; Fre. and Spa. sum. Commonwealth Forestry Review 56(4): 299-301, 304-315. Dec 1977.

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- H HOFLE, H. H. Wood harvesting and protection of the environment, an insoluble conflict? In German; Fre. sum. Schweizerische Zeitschrift fur Forstwesen 127(6): 373-403. 1976.

Wood harvesting techniques can adversely affect both man and the environment. Suggests worldwide information system that would improve present planning methods for forest utilization in order to protect the environment.

- H MINCKLER, LEON S. The abyss. American Forests 84(3): 12-14, 38, 40. Mar 1978.

Steps that can be taken to bridge the gap between foresters and environmentalists.

- H SALVATICI, S., and E. MANNI. The EEC ecological policy, forests and mountain zones in the program of action of the European communities in the environmental field. In Italian; Eng. sum. Monti e Boschi 28(1): 13-18. 1977.

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- A1 BELL, ENOCH F. Estimating effect of timber harvesting levels on employment in western United States. USDA Forest Service Intermountain Forest and Range Experiment Station Res. Note INT-237, 11 pp. Nov 1977.

Methods for predicting changes in employment in wood products industries, and total community employment, as the level of timber harvesting rises or falls.

- A1 KETCHESON, D. E., and J. H. SMYTH. Labor, the key to Ontario's silvicultural program. In English; Fre. sum. Forestry Chronicle 53(6): 336-340. Dec 1977.*

Labor demanded for Ontario's regeneration program is forecast to increase from 114,000 man-days in 1973-1974 to 187,00 man-days in 1982-1983. Projected population estimates suggest that sufficient labor may not be readily available for the level of regeneration activity proposed.

- A3 MOLNAR, F. Methods of evaluating labor productivity in the wood industry. In Hungarian; Rus., Eng., and Ger. sum. In Faipari Kutatasok 1974, pp. 33-47. 1976.

- A3 NOVGORODOVA, T. I. A system of indices for the provision of accommodation for crews of logging enterprises. In Russian. Lesnoi Zhurnal No. 4, pp. 141-144. 1976.

Planning suitable accommodations for logging crews in remote areas in the USSR.

- A3 ROMANOV, E. S. Effect of seasonal factors on labor productivity in logging. In Russian. Lesnoi Zhurnal No. 6, pp. 152-154. 1976.

Monthly variations in labor productivity in the USSR.

- A3 VALONEN, PAAVO. Strip road spacing and the physical strain put on forest workers during pulpwood cutting. In Finnish; Eng. sum. Silva Fennica 11(4): 259-262. 1977.

Time and effort expended in 3 different stacking methods.

- A3 VOZYAKOV, G. S. Experimental investigation of labor costs in felling by different methods. In Russian. Lesnoi Zhurnal No. 5, pp. 124-127. 1976.

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- A4 KLIMA, MIROSLAV. On the present state and prospect for social planning of complex work in forestry. In Czech; Rus. and Eng. sum. In Racionalizacia Riadenia Lesneho Hospodarstva, Brno. pp. 86-107. 1977.

What is being done in Czechoslovakia to improve working conditions.

- A4 MANIG, J., and H. SCHOLZ. The place of mechanized logging in forestry production and some problems of industrial management and work organization. In German. Wissenschaftliche Zeitschrift der Technischen Universitat Dresden 26(2): 517-520. 1977.

Effect of mechanization on working conditions and labor management.

- A4 OVEREND, MILES. Accidents cost industry dearly. Canadian Forest Industries 98(3): 46-47. Mar 1978.

Forest industry executive outlines 10 steps to reduce accidents.

- A4 RILEY, ROBERT G. Mill Managers must shoulder the responsibility for safety programs. Pulp and Paper 52(4): 128-130. Apr 1978.

- A4 SCHILLER, FRAN. Tall but true tales of a troubleshooter. Pulp and Paper 52(1): 146-147. Jan 1978.

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- A4 WIESNER, I. Evaluating the trend of industrial accident rates in Czechoslovakia during 1971-1975. In Czech; Rus., Ger., and Eng. sum. Drevo No. 11, pp. 329-331. 1976.

Wood-industry accident statistics.

- A5 FOREST, CLAUDE, and RENE BOULARD. A Quebec training improvement project, the psychological profile of forestry workers. Reprinted from Adult Training 2(3). American Pulpwood Association Tech. Pap. 77-P-25, 4 pp. 1977.

Psychological profiles help to predict an individual's adaptation to his work setting and his level of occupational ability.

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- A5 LOIBERG, W. YA. Demographic situation in the sawmilling-woodworking and furniture subsectors. In Russian. Derevoobrabatyvayushchaya Promyshlennost' No. 12, pp. 12-13. 1976.

Individual occupations tend to be largely male or female, although total numbers of each sex are nearly equal in the industries as a whole.

- A5 MURGATROYD, A. Woodland portraits, woodland women. Quarterly Journal of Forestry 72(1): 34-36. Jan 1978.

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- B2a CLAUSER, F. Proposals for reconstructing the state forest services and organizing those of the regions. In Italian. Monti e Boschi 27(5/6): 51-54. 1976.

Conflicts between the central and regional governments in Italy.

- B2b AITRO, VINCENT P. (COMP). Fifty years of forestry research: annotated bibliography of the Pacific Southwest Forest and Range Experiment Station, 1926-1975. USDA Forest Service Pacific Southwest Forest and Range Experiment Station Gen. Tech. Rep. PSW-23, 250 pp. 1977.

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- B2b BROCKMAN, C. FRANK. Park naturalists and the evolution of National Park Service interpretation through World War II. Journal of Forest History 22(1): 24-43. Jan 1978.

Development of National Park Service interpretation program.

- B2b CLAWSON, MARION. What's ahead for the Forest Service? American Forests 84(1): 16-19, 49, 50. Jan 1978.

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- B2b CONWAY, M. J. Management policy for New Zealand's indigenous state forests. New Zealand Forest Service. 15 pp. 1977.

- B2b CRAIG, GEORGE A., and JOHN T. KEANE. Economic analysis, a better way to guide federal timber programs. Forest Industries 104(12): 80-81. Nov 1977.

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Expertise of foresters and economists should be relied upon in devising national forest timber management programs.

- B2b DENDWICK, F. M., G. R. STEVENSON, C. L. RENTZ, and J. R. GORMAN. Forest research bibliography, 1968-1975. Canadian Forestry Service Northern Forest Research Centre Information Rep. NOR-X-152, 64 pp. + app. Feb 1976.

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- B2b DUCKWORTH, ROBERT. Managing military lands in Georgia. Forest Farmer 37(6): 26, 45-46. Apr 1978.

Professional foresters have been managing lands on military reservations since the early 1950s. Before that time timber stands were often understocked and devastated by fire. Timber programs have become highly productive and self-supporting.

- B2b FERLIN, G. R. The role of the Sahelian forester. In French; Eng., and Spa. sum. Bois et Forêts des Tropiques No. 171, pp. 5-15. 1977.

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- B2b GUSEV, N. N. Current problems in the organization and management of Group I forests. In Russian. Lesnoe Khozyaistvo No. 9, pp. 47-52. 1976.

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- B2b HILLMAN, LAUREN L. A success story on Kistachie, George Tannehill Jr. and the Winn Ranger District. Forests and People 28(1): 16-17, 34. 1978.

History of Kistachie National Forest, Louisiana.

- B2b PRICE, C. Cost-benefit analysis, national parks, and the pursuit of geographically segregated objectives. Journal of Environmental Management 5(1): 87-97. 1977.

Cost-benefit analysis could be a useful tool for decision-making in national parks. Special weight would be given to amenity, recreation, and aesthetic values.

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- B2b RUPRICH, JIRI, and JOZEF PORUBIAK. The organization and management of the State forests in CSSR. In Czech; Rus. and Eng. sum. In Racionalizacia Riadenia Lesneho Hospodarstva, Brno. pp. 70-85. 1977.
- B2b SALTER, E. C. Newfoundland Forest Research Centre publications, 1950-1976. Environment Canada Forestry Service Information Report N-X-140, 59 pp. Jun 1976.
- B2b THOMAS, W. PAT. National forests in Georgia. Forest Farmer 37(6): 18-19, 48-50. Apr 1978.
- Multiple use of Georgia's national forests.
- B2b TOMANIC, SIMEUN. The organization and management of the socially-owned forests in Yugoslavia. In Racionalizacia Riadenia Lesneho Hospodarstva, Brno. pp. 179-188. 1977.
- B2b UNITED STATES CONGRESS, HOUSE. Committee on Agriculture. Forest Service timber sales study, report together with dissenting views to accompany H.R. 6362. U.S. Congress, House of Representatives Report No. 95-402, 26 pp. Jun 1977.
- B2b UNITED STATES CONGRESS, SENATE. Committee on Energy and Natural Resources. Amending section 14(e) of the National Forest Management Act concerning collusive bidding practices in national forest timber sales. Report together with minority views to accompany S. 1360. U.S. Congress, Senate Report No. 95-33, 22 pp. Jul 1977.
- B2b USDA FOREST SERVICE. Regulations governing the occupancy and use of developed recreation sites on national forests. USDA Forest Service. 6 pp. 1977.
- B3a DIGBY, M., and T. E. EDWARDSON. The organization of forestry cooperatives. The Plunkett Foundation for Cooperative Studies Occasional Paper No. 41, London. 250 pp. 1976.
- Economic, legal, social, and conservation aspects of forestry cooperatives worldwide.
- B3a JUSLIN, HEIKKI. Influencing private forest owners' attitudes toward timber sales. In Finnish; Eng. sum. Acta Forestalia Fennica Vol. 157, 67 pp. 1977.
- Ways in which planners can alter the behavior of private forest owners.
- B3a LONNESTEDT, L. The cutting policy of private forest owners in Sweden. Scandinavian Forest Economics No. 13, pp. 9-12. 1976.

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- B3a VARDAMAN, JAMES M. Tree farm business management, 2nd edition. John Wiley & Sons, Inc., New York. 256 pp. 1978.

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- B3c HOLMES, W. D., and C. J. INGLIS. Economic survey of private forestry income and expenditure Scotland for the sixteen years 1961-1976. University of Aberdeen, Department of Forestry. 61 pp. Nov 1977.

Income, expenditure, labor use, forestry activity, and growing-stock structure on 54 estates.

- B3c HOLMES, W. D., and C. J. INGLIS. Survey of private forestry costs in Scotland for forest year 1976. Twenty-fifth annual report. University of Aberdeen, Department of Forestry 58 pp. Dec 1977.

- B3c MOAK, JAMES E. Who is the small forest owner? Forest Farmer 37(4): 8-9. Feb 1978.

Characteristics of private nonindustrial owners in Mississippi.

- B3c POPOVICH, LUKE. Working with the woodland owner, close encounters with a third kind. Journal of Forestry 76(4): 228-230. Apr 1978.

Many obstacles must be overcome to increase timber production on private nonindustrial lands.

- B3c SEDJO, ROGER A., and DAVID M. OSTERMEIER. Policy alternatives for nonindustrial private forests. Report of the Workshop on Policy Alternatives for Nonindustrial Private Forests, Airlie, Virginia, Aug 30-Sep 1, 1977. Society of American Foresters and Resources for the Future. 54 pp. 1978.

Policy alternatives: (1) benign neglect—a minimum of government involvement; (2) status quo—continue existing programs and expenditure levels; (3) reform—continue present expenditure levels but modify existing programs and attempt to improve implementation; (4) market improvement—stress activities to improve the performance of fiber markets; and (5) increased government involvement—increase government expenditures and active government involvement to induce fiber production, utilizing a variety of measures including subsidies and directives.

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- B3c STODDARD, CHARLES H. Proposed management and marketing foundation for improving production on small forests. Journal of Forestry 76(3): 158-159. Mar 1978.

Advocates establishing a federal financing and operating corporation to help private individuals manage their forest land.

- B3c UNITED STATES DEPARTMENT OF AGRICULTURE. The federal role in the conservation and management of private nonindustrial forest lands. USDA Soil Conservation Service, Forest Service, Extension Service Report. 63 pp. + app. Jan 1978.

National importance of private nonindustrial forests, principal factors that may inhibit resource management on these lands, and approaches available to the Federal Government to stimulate the conservation and management of private nonindustrial forest lands.

- C2 CAROTHERS, J. EDWIN, and HENRY CALHOUN SMITH. Land use patterns on private forested properties in Louisiana. Louisiana Tech University School of Forestry Bul. No. 10, 39 pp. 1977.

Survey of landowners showed that timber production was the preferred land use.

- C3 ARMSTRONG, FRANK H., and RUSSELL D. BRIGGS. What's your forest land worth? American Forests 84(2): 14-17, 48-50. Feb 1978.

Prices of well-stocked forest land will, for the most part, continue to increase.

- C3 BENE, J. G., H. W. BEALL, and A. COTE. Trees, food, and people: land management in the tropics. International Development Research Centre, Ottawa. 52 pp. 1977.

Need for improved management and multiple use of land in the tropics. Agroforestry, the integration of forestry, agriculture, and livestock production, could optimize tropical land use.

- C3 FERRISE, ANTHONY, and DALE COLYER. Land use, an approach to public policy in West Virginia. West Virginia Agriculture and Forestry 7(2): 6-10. Dec 1977.

Activities of State Land-Use Committee.

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- C3 GWYER, G. Regional land use planning in relation to forestry. FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia. Manila, Aug 16, 1976. Rome. 11 pp. 1976.
- C3 HENTSCHEL, P. Determination of land-use interference and the necessity for coordination in the context of landscape planning. In German; Rus. and Eng. sum. Archiv fur Naturschutz und Landschaftsforschung 17(1): 27-33. 1977.
- Timber production, agriculture, water management, recreation, and industry: Land-use planning technique estimates the need for local measures of coordination.
- C3 HERTER, J. Ideas on the relationship between land-use planning and forestry in St. Gallen canton. In German; Fre. sum. Schweizerische Zeitschrift fur Forstwesen 128(5): 305-325. 1977.
- C3 LINDSAY, J. M. Forestry and agriculture in the Scottish Highlands 1700-1850, a problem in estate management. Agricultural History Review 25(1): 23-36. 1977.
- How the competition between forestry and agriculture has affected land use.
- C3 MILLER, ROBERT W., ROBERT S. BOND, and BRIAN R. PAYNE. Land and timber values in an urban region. Journal of Forestry 76(3): 165-166. Mar 1978.
- Over a 20-year period, land values in central Massachusetts increased at a faster rate than stumpage values. Potential earnings from timber management are a declining factor in real estate transactions in this urban region.
- C3 PLATTNER, E. Forests and land use. In German. All-gemeine Forstzeitung 88(3): 51-53. 1977.
- Land-use planning and forest development in Austria.
- C3 RAUBENHEIMER, A. J. Forestry and land-use planning. Presented at the 9th Annual General Meeting of the South African Institute of Foresters, Apr 5, 1977. In Afrikaans. South African Journal of Forestry No. 101, pp. 3-5. Jun 1977.
- C3 VERGARA, N. T. Shifting agriculture in the humid tropics, analysis and control. Philippine Lumberman 22(7): 25-31. 1976.
- Taungya is a system of shifting agriculture that requires farmers to plant forest and agricultural crops on the same area. Areas of Java have been reforested in this way.

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- A1 CARDER, D. ROSS. Multi-resource management research in the Southwest, the Beaver Creek program. *Journal of Forestry* 75(9): 582-584. Sep 1977.

Goals of the program: (1) assess the biophysical and socio-economic effects of management practices in ponderosa pine forests and pinyon-juniper woodlands; (2) develop methods by which land managers can predict outcomes of various practices and select those that are likely to give the most desirable mix of benefits.

- A1 GROSSER, K. H. Proposal for the classification of the social and biological functions of forest and woodland in the context of landscape management. In German; Rus. and Eng. sum. *Archiv fur Naturschutz und Landschaftsforschung* 16(3/4): 189-214. 1976.

- A1 GRUT, MIKAEL. Recreation in the forest plantations, a cost-benefit analysis. *South African Forestry Journal* No. 101, pp. 61-69. Jun 1977.

Value of recreational visits to a plantation during the year 1975/76. Lengthening the rotation in recreation plantations will enhance their amenity value.

- A1 KOVAL', I. P. Multiple use of the montane forests of the North Caucasus. In Russian. *Lesnoe Khozyaistvo* No. 1, pp. 36-40. 1977.

Water-regulating, soil-protecting, and spa/resort zones, and their management.

- A1 NEWELL, K. Plantation forestry: landscape and recreational aspects. *New Zealand Journal of Forestry* 22(2): 233-237. 1977.

Managers must consider both the financial and the social benefits of the forest.

- A1 PESTAL, E. Mechanization, recreation, and nature conservation in the forest. In German. *Allgemeine Forstzeitung* 88(3): 58-60. 1977.

Managing forests for recreation, timber production, and nature conservation.

- A1 SAASTAMOINEN, OLLI. Economics of forest uses in Finnish Lapland. In English; Fin. sum. *Silva Fennica* 11(3): 162-168. 1977.

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Timber harvesting generates a major part of the total value of forestry, followed by recreation. Other forest uses are collection of berries and mushrooms, hunting, and reindeer husbandry.

- A1 WIEBECKE, C. Wood production and services in forestry. In German; Eng. sum. Forstarchiv 48(6): 108-110. 1977.

Beneficial effects of the forest on man and the environment, apart from the primary production of raw materials.

- A1 ZUMBRO, FRANK R. Timberland turnaround. American Forests 84(2): 18-21, 42, 45. Feb 1978.

For the last 20 years, formerly ill-treated woodlands surrounding a manufacturing plant have been so efficiently managed that they are now providing timber for profit and recreation for plant employees.

- A2 HANSEN, BRUCE G. Goal programing, a new tool for the Christmas tree industry. USDA Forest Service Northeastern Forest Experiment Station Res. Pap. NE-378, 4 pp. 1977.

Goal programing in production and marketing.

- A2 NOLLEY, JEAN. Christmas trees, a bibliography. American Christmas Tree Journal 22(1): 27-28. Feb 1978.

1978 supplement published by the National Christmas Tree Association.

- A5a(1) ELSNER, GARY H. (COMP). State-of-the-art methods for research, planning, and determining the benefits of outdoor recreation. USDA Forest Service Pacific Southwest Forest and Range Experiment Station Gen. Tech. Rep. PSW-20, 62 pp. 1977.

Contains the following papers from the 16th IUFRO World Congress, Oslo, Norway, Jun 22, 1976: Improvement of demand studies as tool for planning outdoor recreation (H. van Lier); Forecasting the demand-response to changes in recreational site characteristics (P. Greig); On the use of home and site surveys in recreation research (M. Shechter); Relative value of selected outdoor recreation activity areas (J. Hoffman, Jr.); A recreational visitor travel simulation model as an aid to management planning (R. Lucas, M. Shechter); A survey of wildlife-related recreation in the Tennessee Valley region (J. Mechler, E. L. Klein); Mathematical programming in the context of planning for multiple goals (A. Rudra); Investigations on recreational forested areas (U. Ammer).

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- A5a(2) HEIKINHEIMO, LAURI, ESKO JAATINEN, SEPPÖ KELLOMAKI, LASSE LOVEN, and OLLI SASTAMOINEN. Forest recreation in Finland, pilot study. In Finnish; Eng. sum. Folia Forestalia 321, 45 pp. 1977.

Problem area, research tasks, and detailed outline for a basic national forest recreation survey.

- A5a(4) DOWNING, KENT B., and WILLIAM R. WILLIAMS. Douglas-fir tussock moth, did it affect private recreational business in northeastern Oregon? Journal of Forestry 76(1): 29-30. Jan 1978.

Although business volume decreased during the tussock moth infestation, other factors were responsible.

- A5a(4) DRIVER, B. L., and RICHARD C. KNOPF. Personality, outdoor recreation, and expected consequences. Environment and Behavior 9(2): 169-193. Jun 1977.

How personality traits affect recreation choice and participation.

- A5c KELLOMAKI, SEPPÖ. Potential of trails in guiding recreational activity. In Finnish; Eng. sum. Silva Fennica 11(4): 263-268. 1977.

Visitors to 2 recreation areas were questioned about their use of trails.

- A5e BECKER, DAVID G. Proxemics and recreational spatial behavior in Yellowstone National Park campgrounds. Dissertation, Ph.D. University of Illinois. 180 pp. 1977.

Campers' use of space in campgrounds.

- A5g LANGENAU, EDWARD E., JR., GALE C. JAMSEN, and RALPH L. LEVINE. The stability of attitudes toward clearcutting among landowners in Roscommon County, Michigan. Forest Science 23(4): 437-444. Dec 1977.

Large blocks of state land were clearcut in Roscommon County, Michigan. Sampling of property owners in the county showed that 44 percent agreed with clearcutting, 26 percent were undecided, and 30 percent disagreed.

- A6 IL'EV, L. I., and R. N. GORDIENKO. Economic effectiveness of protection stands. In Russian. Lesnoi Zhurnal No.5, pp. 120-124. 1976.

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Cash benefits of protection stands.

- A6 LANGFORD, K. J., and P. J. O'SHAUGHNESSY. Some effects of forest change on water values. Australian Forestry 40(3): 192-218. Sep 1977.

Good management practices can reduce the harmful effects of forest operations on soil and water.

- A6 VAN DEUSEN, JAMES L. Shelterbelts on the Great Plains: What's happening? Journal of Forestry 76(3): 160-161. Mar 1978.

Symposium held in Colorado in 1976 discussed present, past, and future role of shelterbelts. Government programs offer various forms of landowner assistance.

- A7 BALINGA, VICTOR S. Competitive uses of wildlife. Unasylva 29(116): 22-25. 1977.

Management, utilization, and conservation of wildlife in Cameroon.

- A7 DE VOS, ANTOON. Game as food, a report on its significance in Africa and Latin America. Unasylva 29(116): 2-12. 1977.

Wildlife is a source of protein for human consumption in developing countries. Where livestock production or agriculture is meager, wild animals can be utilized efficiently for food. There is a high potential for harvesting wild animals in well-managed forests.

- A7 HARDIN, KIMBERLY I., and KEITH E. EVANS. Cavity-nesting bird habitat in the oak-hickory forests, a review. USDA Forest Service North Central Forest Experiment Station Gen. Tech. Rep. NC-30, 23 pp. 1977.

Potential influences of silvicultural practices and management alternatives.

- A7 SACEY, V. A. The relationship between forestry and wildlife. Ghana Forestry Journal No. 2, pp. 20-22. 1976.

Suggestions for game management on forest reserves.

- A8 ALBRECHT, J., and D. SMITH (COMPS). Urban forestry, a selected bibliography of publications in the University of Minnesota Forestry Library. University of Minnesota Forestry Library Bibliography Ser. No. 3, 15 pp. 1977.

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- A8 HARTSHORN, ELINOR C. The blacktop mentality. *American Forests* 84(3): 26-29, 45-46. Mar 1978.

Aesthetic and environmental value of trees in urban areas.

- B1 BOYCE, STEPHEN G. Potential production of loblolly pine in coastal Virginia. In *Tappi Conference Papers, Forest Biology Wood Chemistry Conference 1977*. Tech. Assoc. Pulp and Pap. Ind., Atlanta. pp. 125-129. 1977.

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- B1 FRASER, T. Plantation forestry: a role for energy farming? *New Zealand Journal of Forestry* 22(2): 242-245. 1977.

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- B1 GADANT, J. The oak in the seventeenth century, ship timber and fruit tree. In French. *Revue Forestiere Francaise* 29(1): 56-59. 1977.

- B1 LAMBERT, HERB. A look at why timber supply is the number-one problem. *Forest Industries* 104(13): 30-33. Dec 1977.

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- B1 MEIDEN, H. A. VAN DER. Official support for poplar growing. In Dutch. *Populier* 14(2): 43-44. 1977.

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- B1 MUSE, HOWARD S., JR. Opportunities for managing white pines in the southern Appalachians. *Forest Farmer* 37(4): 6-7, 16-17. Feb 1978.

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- B3 ALLAN, T. G. Planning of savanna plantation projects. In English and French. In Symposium on Savanna Afforestation, Kaduna, Nigeria, Feb 16, 1976. pp. 220-233. Food and Agriculture Organization of the United Nations, Forest Resources Division. Rome. 1977.

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- B3 HEENEY, C. J. Regeneration in Ontario. In English; Fre. sum. Pulp and Paper Canada 79(1): 29-32. Jan 1978.

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- B3 HENSEL, J. S. Idaho Reforestation Act. American Pulpwood Association Technical Release No. 77-R-24, 15 pp. 1977.

- B3 MC CONCHIE, B. D. Plantation forestry: the future, an industry viewpoint. New Zealand Journal of Forestry 22(2): 226-228. 1977.

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- B3 OSENI, A. M. Forest plantation planning at the national level. In English and French. In Symposium on Savanna Afforestation, Kaduna, Nigeria, Feb 16, 1976. pp. 214-219. Food and Agriculture Organization of the United Nations, Forest Resources Division. Rome. 1977.
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- C MAKOVNIK, STEFAN. The tracing of roads in wooded land. In Czech; Eng. sum. Lesnický Casopis 24(1): 49-58. 1978.

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- D1 HAUGLAND, RICHARD L. Specific ways loggers can cut risk of operation-caused fires. Forest Industries 104(12): 62-63. Nov 1977.

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- D3 HARDY, YVAN. Integrating the spruce budworm into Quebec forest management. In English; Fre. sum. Pulp and Paper Canada 79(1): 77-79. Jan 1978.

- D3 HEDDEN, R. L. The need for intensive forest management to reduce southern pine beetle activity in east Texas. Southern Journal of Applied Forestry 2(1): 19-22. Feb 1978.

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- D4 RICHTER, J. Financial losses in spruce forests on sites where snow and ice breakage occurs. In German. Allgemeine Forstzeitschrift 32(7): 168-169. 1977.

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- E AARESTRUP, J. The real value of investment in forestry and other sectors. In Danish; Eng. sum. Dansk Skovforenings Tidsskrift, pp. 55-72. 1977.

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- E KOSS, WILLIAM, and BILLY DEAN SCOTT. Investment guidelines for Douglas fir. State of Washington Department of Natural Resources Report No. 36, 34 pp. Feb 1978.

- E NOR, SALLEH H. A preliminary simulation model for forest stand management in Peninsular Malaysia. Dissertation, Ph.D. Michigan State University. 219 pp. 1977.

- E NOVOTNY, MILAN. The use of computer techniques in forest management. In Czech; Rus. and Eng. sum. In Racionalizacia Riadenia Lesneho Hospodarstva, Brno. pp. 54-69. 1977.

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- E PAYANDEH, BIJAN. Making the most of forest managers' knowledge in choosing economically desirable regeneration systems. In English; Fre. sum. Forestry Chronicle 53(6): 355-363. Dec 1977.

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- E SCHWEITZER, DENNIS L, and ERVIN G. SCHUSTER. Economics and tree planting in the Inland Northwest. In Tree Planting in the Inland Northwest. Washington State University Cooperative Extension Service, Pullman, Washington. 1977.

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- A1b CANADIAN FOREST INDUSTRIES. Review and forecast. Canadian Forest Industries 98(1): 4, 24, 25, 27, 29, 31, 33, 35. Jan 1978.

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- A1b CHEEK, GEORGE C. Raw material for the industry's future. Paper Industry 60(1): 6-8, 10. Jan 1978.

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- A1b JOHNSON, WALTER W. The forest products industry in Pennsylvania. Northern Logger and Timber Processor 26(10): 8-9, 25. Apr 1978.

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- A1b MONTEITH, DOUGLAS B. Wood production in New York and installed primary plant capacity. Northern Logger and Timber Processor 26(9): 16-17. Mar 1978.

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- A1b RICH, STUART U. Coping with high timber prices, fluctuating housing demand. Forest Industries 104(13): 36-38, 49. Dec 1977.

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- A1c CHOW, POO. China's forestry sector mechanizes to keep pace with industrial needs. Forest Industries 105(1): 66-67. Jan 1978.

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- A2 FOREST INDUSTRIES. 1978 directory of the forest products industry. 59th edition. Miller Freeman Publications, San Francisco. 800 pp. 1978.

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- A2 FOREST INDUSTRIES. Directory of panel plants. Forest Industries 105(3): 106-138. Mar 1978.

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- C1c MEYER, B. Calculating production costs for framesaw mills. In German. Holz-Zentralblatt 103(78): 1157-1159. 1977.

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- C2a POLLITZER, STEPHANIE. Capital spending. Pulp and Paper 52(1): 107-114. Jan 1977.

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- C2a SLATIN, BENJAMIN. Resource recovery and reuse, a valuable opportunity. Tappi 61(4): 47-50. Apr 1978.

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- C2b BUBLITZ, W. J., and R. O. MC MAHON. Shredding of western hemlock chips for bisulfite pulping improves pulping rate but lowers strength properties of pulps. Tappi 60(8): 105-106. Aug 1977.

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- C4 CARPENTER, EUGENE M. Secondary wood residue: production, use, and potential in the Twin City area. USDA Forest Service North Central Forest Experiment Station Res. Pap. NC-144, 6 pp. 1977.

- C4 CARPENTER, STANLEY B., and DONALD H. GRAVES. Healing land with mill wastes. American Forests 84(3): 35. Mar 1978.

Bark mulching on surface mines in Kentucky eliminates the bark-disposal problem and contributes to the establishment of trees and other vegetation.

- C4 CLARKE, EDWARD H., and JOHN W. HENLEY. Unused mill residuals may all serve as fuel. Forest Industries 105(2): 54-55. Feb 1978.

Financial considerations favor converting mill residues into energy while improving product recovery from fiber now left in the woods.

- C4 MC MAHON, ROBERT O. Mill and wood residues tributary to Eugene, Oregon available for steam generation. Oregon State University Forest Research Laboratory Res. Bull. 20, 10 pp. Jan 1976.

Fuel consisting almost entirely of green bark is potentially available to the Eugene Water and Electric Board for the next 20 years. Sawmills would supply 64 percent of the available units; veneer and plywood plants, 24 percent; and shake, shingle, and chip mills, 11 percent.

- C4 SINNIKOV, A. S., A. L. PARSHEVNIKOV, A. A. SHAMIN, and L. V. MEN'SHIKOVA. Utilization of bark. In Russian. Lesnoe Khozyaistvo No. 12, pp. 57-58. 1976.

Bark compost as a growth medium in agriculture and forestry.

IV APPLIED TO MANUFACTURING

- C5 LOFTUS, W. F. Use of wood piles as they compete against other types of piles. Proceedings, American Wood-Preservers' Association No. 72. William F. Loftus Associates, Inc., Englewood Cliffs, N.J. pp. 47-52. 1976.

- C8 BLACKMAN, TED. Bark pellets are high-energy fuel for coal, gas applications. Forest Industries 105(2): 48-49. Feb 1978.

Increased use of pellets could bring about the greater utilization of residues.

- C8 BLANKENHORN, P. R., T. W. BOWERSOX, and W. K. MURPHEY. Recoverable energy from the forests, an energy balance sheet. Tappi 61(4): 57-60. Apr 1978.

Net energy obtained in using forest biomass as a fuel; major areas of energy input; maximum haul distances that can be reached before the energy expended is greater than the energy recovered in converting the forest biomass to heat, process steam, and electricity.

- C8 CHURCH, T. W., JR. Old crossties, a potential energy source for wood preserving plants. In Proceedings, American Wood-Preservers' Association No. 72, pp. 87-95. USDA Forest Service Forest Products Marketing Laboratory, Princeton, West Virginia. 1976.

Possibility of efficiently and economically burning old railway sleepers for energy in U.S. wood-preserving plants.

- C8 EVANS, R. S. Energy self-sufficiency prospects for the British Columbia forest products industry. Canadian Forestry Service Western Forest Products Laboratory Information Rep. VP-X-166, 19 pp. Apr 1977.

Feasibility of utilizing forest-product manufacturing residues for internal energy generation.

- C8 GRANTHAM, JOHN B. Wood's future seems directed to energy ahead of chemicals. Forest Industries 105(2): 52-53. Feb 1978.

Chemicals derived from wood cost too much to be competitive. For the next 20 years, combustion of wood and bark for energy should increase.

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- C8 HODAM, ROBERT. Economical energy conversion promised by wood gasification. *Forest Industries* 105(2): 56-57. Feb 1978.

Gasification might allow the forest products industry to generate all its own power.

- C8 HUGHES, FRANK. Is there profit in wood waste? Part I. *Canadian Forest Industries* 97(12): 25-26. Dec 1977.

Wood waste has become a competitive fuel.

- C8 HUGHES, FRANK. Is there profit in wood waste? Part II. *Canadian Forest Industries* 98(1): 51-53. Jan 1978.

Types of fuel that can be obtained from wood and produced by a sawmill operator.

- C8 HUGHES, FRANK. Is there profit in wood waste? Part III. *Canadian Forest Industries* 98(2): 24, 26-27. Feb 1978.

Compares costs of using wood and fossil fuels for energy.

- C8 MORSE, R. N., and J. R. SIEMON. The role of forests as a source of solar energy. *Journal of the Institute of Wood Science* 7(4): 37-42. 1976.

Rising energy costs could make ethanol competitive with synthetic fuels such as oil from coal.

- C8 THOMPSON, A. P. Forests, forest products and energy. *New Zealand Journal of Forestry* 22(2): 193-220. 1977.

Production of energy from forests could go through 4 stages: (1) using industrial residues for in-house energy; (2) using forest residues for further energy needs of the forest-products industries and possibly other industries; (3) diversion of part of a forest crop to energy production; (4) growing forests for energy alone.

- C8 WALD UND HOLZ. Fuelwood and wood heating in relation to the present energy supplies. In German. *Wald und Holz* 58(3): 153-175. 1976/1977.

Special issue, on using wood instead of oil in heating systems, contains the following articles: Fuelwood in the present energy crisis (A. Semadeni); Wood, a modern source of energy and fuel (E. Affolter); Wood, for heating and as a raw material in mountain areas (A. Leuenberger); The significance of fuelwood in forest management (J. Widrig); Efficiency of the present wood heating systems (H. J. Schmid).

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- C8 WAYMAN, MORRIS. High-yield wood, a promising fuel. Forest Industries 97(12): 27-29, 31. Dec 1977.

Wood could satisfy much of Canada's fuel requirements. Research is needed on (1) developing fast-growing woods, (2) processing fuels (i.e., ethanol and lignin) from wood, and (3) producing fuel by autotrophic microbial systems.

- C9 DEPPE, HANS-JOACHIM. New markets for structural particleboard. In English; Fre., Ger., and Spa. sum. World Wood 19(1): 16-17. Jan 1978.

Europe's particleboard industry should diversify its range of specialty products and end its over-dependence on the furniture industry.

- C9 DICKERHOOF, H. EDWARD. Particleboard production, markets, and raw material requirements in the South. USDA Forest Service Southeastern Forest Experiment Station Res. Pap. SE-157, 7 pp. Feb 1977.

The South accounted for 44 percent of all particleboard manufactured in the United States in 1974.

- C9 DICKERHOOF, ED. Particleboard production, markets, and raw material use surveyed by USDA in western United States. Plywood and Panel 17(9): 22-23. Feb 1977.

If raw-material problems can be solved, western particleboard industry should maintain its share of the national market. Otherwise, a larger share of production could shift to other regions, particularly the South.

- C9 FRASER, HUGH R. Chipboard attacks house shortage. In English; Fre., Ger., and Spa. sum. World Wood 19(1): 9-11. Jan 1978.

Indonesia's first particleboard plant uses waste rubberwood. The particleboard is used in constructing prefabricated, low-cost housing.

- C9 PLEYDELL, GEOFF J. Particleboard in mixed tropical hardwoods from Nigeria is Africa's first. In English; Fre., Ger., and Spa. sum. World Wood 19(1): 14-15. Jan 1978,

Nigerian plant manufactures particleboard from a controlled mix of tropical hardwood residues. Nigeria's new oil-based economy assures a substantial domestic market.

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- C9 SCHUBERT, J. New materials as substitutes in the manufacture of containers, new aspects of the economy of raw materials. In German. Holzindustrie 30(2): 50-51. 1977.

Possibility of substituting wet-strength cardboard and cardboard-veneer composites for wood in containers in East Germany.

- C10 BROWN, W. H. The role of hardwood in marine construction. In English; Fre., Ind., Spa., and Jap. sum. Timber Review No. 27, pp. 12-14. 1976.

Many tropical hardwoods are suitable for use in seawater.

- C10 KALLIO, EDWIN, and WILLIAM L. GALLIGAN. Factors affecting the use of lumber by truss fabricators in the United States. Forest Products Journal 28(3): 15-18. Mar 1978.

Design and marketing of trusses; lumber requirements of this billion-dollar industry.

- C10 SCHNYDER, S. and E. P. GRIEDER. Recession in the building industry, consequences for the wood industry. In German; Fre. sum. Schweizerische Zeitschrift fur Forstwesen 127(6): 357-372. 1976.

- C11 CARRINGTON, J. F. Wooden drums for intervillage telephony in central Africa. Journal of the Institute of Wood Science 7(4): 10-14. 1976.

Wooden drums are used to broadcast messages.

- D2 GILLIS, JIM L., JR. Gum naval stores industry. Forest Farmer 37(6): 28, 40-41. Apr 1978.

Georgia produced 86 percent of the nation's gum naval stores in 1976.

- D3 GARRETT, LAWRENCE D. Processing maple syrup with a vapor compression distiller, an economic analysis. USDA Forest Service Northeastern Forest Experiment Station Res. Pap. NE-385, 12 pp. 1977.

Vapor compression distillers are more energy efficient than conventional evaporators, produce syrup of equal quality, and are effective in reducing total annual processing costs.

IV APPLIED TO MANUFACTURING

D3 SENDAK, PAUL E. Birch sap utilization in the Ukraine
Journal of Forestry 76(2): 120-121. Feb 1978.

Compares Ukrainian birch sap industry with North
American maple industry.

V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT

- A1 GROOME, J. G. Obtaining data for export demand analysis. FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia. Manila, Aug 16, 1976. Rome. 12 pp. 1976.

Wood supply and wood processing potential of exporting countries.

- A2 BRUNIG, E. F. Productivity and productivity limits for the forests of the world. In German; Eng. sum. Forstarchiv 48(6): 105-108. 1977.

Present and potential wood production in relation to world requirements.

- A2 CHAIYAPECHARA, S. Domestic timber demand study in Thailand. FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia. Manila, Aug 16, 1976. Rome. 11 pp. 1976.

Demand projections for urban and rural areas.

- A2 CHANDRASEKHARAN, C. Analysis and forecasting of wood requirements. FAO/SIDA Workshop on Forestry Development Planning for Countries of Southeast Asia. Manila, Aug 16, 1976. Rome. 39 pp. 1976.

- A2 HAAS, LEONARD. FAO projections debated in Tunis meeting. In English; Fre., Ger., and Spa. sum. Pulp and Paper International 19(13): 73-75. Dec 1977.

Two studies project paper and board consumption to 1990.

- A2 OLLMANN, H. Forecast of wood consumption in the German Federal Republic for the period 1980-1985. In German; Eng. sum. Forstarchiv 48(6): 111-116. 1977.

- B1a FENTON, GORDON M. British Columbia log and chip export regulations. Paper presented at the American Pulpwood Association, Western Technical Division meeting, Sep 29, 1977, Vancouver, B.C. American Pulpwood Association 77-P-22, 7 pp. 1977.

Domestic wants of British Columbia are satisfied before consideration is given to the export of logs and chips.

V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT

- B1a GRANT, R. K. Effective protection and comparative advantage in New Zealand's forest enterprises, a comment. New Zealand Journal of Forestry Science 7(2): 240-249. Oct 1977.

New Zealand's comparative advantage lies in the export log trade rather than in the wood-processing industry. New Zealand's system of industrial protection and incentive favors the wood-processing industry.

- B1a SCHREIBER, A. The significance of wood marketing research for forest policy. In German. Forst- und Holzwirt 32(10): 177-182. 1977.

Lecture dealing with the following topics: financial maturity of forest stands; multiple use and compensation for social uses; transport costs and location of forest-products industries; international markets; changes in the uses of wood; and competition with tropical wood and with non-wood material.

- B2 CLAWSON, MARION. Public log markets as a tool in forest management. Land Economics 54(1): 16-26. Feb 1978.

Proposes the establishment of public log markets consisting of assembly yard, grading and sorting facilities and services, and sale procedures. Both public agencies and private owners could send their logs to the market. Any log processor could buy logs in the market. Advantages to private timber sellers, public agencies, and timber buyers.

- B3 CANADIAN FOREST INDUSTRIES. Lumber and markets. Canadian Forest Industries 98(1): 46-47, 50. Jan 1978.

1978 is not expected to be as good a year for Canadian lumber markets as 1977. U.S. demand for Canadian lumber should lessen, since housing starts are expected to decrease.

- B3 UNITED STATES INTERNATIONAL TRADE COMMISSION. Summary of trade and tariff information: hardwood plywood. U.S. International Trade Commission Publication 841, 68 pp. Apr 1978.

Tariff schedules of the United States.

- C3 BUONGIORNO, J., and J. W. BALSIGER. Analysis and short-term forecasts of the price of sawn timber and flooring. In French. Revue Forestiere Francaise 29(1): 41-49. 1977.

ARIMA method is applied to timber prices on the Paris market for the period 1968-1976.

V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT

- C3 RICH, STUART U. Price patterns in the paper industry. Forest Products Journal 28(14): 13. Apr 1978.

Paper market has traditionally been characterized by leadership pricing, with attendant high degree of price stability. This policy has been shelved during the last few months, which have been marked by price cutting.

- D BERGER, R., and J. J. DE C. ENGLER. Minimization of the cost of transport of eucalyptus wood in the state of Sao Paulo, Brazil. In Portuguese; Eng. sum. IPEF No. 12, pp. 1-52. 1976.

Three linear-programming models have been used to determine transportation costs.

- D ROITTO, YRJO. The economic transport unit size in roundwood towing on Lake Iso-Saimaa in eastern Finland. In English; Fre. and Fin. sum. Acta Forestalia Fennica Vol. 153, 31 pp. 1976.

Transport unit is composed of a tug and a raft of bundled wood with a towline between them. Both the size of the raft and the power of the tug influence unit cost.

INDEX

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